

Questionnaire

UK COVID-19 Inquiry: Module 2B - Rule 9 Request to Dr Robin Howe- Reference: M2B/RH/01

Please provide the following information:

1. A brief overview of your qualifications, career history, professional expertise and major publications.

Qualifications

MBBS, University of Newcastle upon Tyne	1989
BA, Archaeology and Anthropology (class 2:1), University of Cambridge	1986
Fellowship of the Royal College of Pathologists	2000

Employment History

2005 - Present	Consultant Medical Microbiologist, Public Health Wales Microbiology Cardiff/ University Hospital of Wales
2002 - 2004	Consultant Senior Lecturer in Medical Microbiology University of Bristol/ North Bristol NHS Trust
2001 - 2002	Senior Clinical Research Fellow North Bristol NHS Trust
1995 - 2001	Specialist Registrar in Medical Microbiology North Bristol NHS Trust/ Bristol Public Health Laboratory

Professional Experience

I have worked as a consultant microbiologist at the University Hospital of Wales for the last 17 years. This is a tertiary care teaching hospital that has regional critical care services, neonatal intensive care, neurosurgery, haematology (including bone marrow transplant unit), paediatrics (including paediatric oncology), nephrology (including renal and pancreatic transplant unit), ophthalmology, adult and paediatric cystic fibrosis units, and a dental hospital. I have experience of general clinical microbiology and the specific microbiology issues associated with the local specialist units. I also have experience of infection control and outbreak management both locally (norovirus, *C. difficile*, MRSA, Carbapenemase-producing organisms, *Pseudomonas aeruginosa* on a SCBU), and nationally (*Acinetobacter* spp. on a burns unit, mupirocin-resistant MRSA, PVL-producing *S. aureus*).

I have a number of leadership and national/international roles:

- Director of Infection Services for Public Health Wales
 - In this role I lead microbiology clinical and laboratory and reference services across Wales with a staff of more than 650, including more than 30 Consultants. The network includes the Anaerobe Reference Unit, Cryptosporidium Reference Unit, and Toxoplasma Reference Unit, which provide reference services across the UK.

- Incident Director for the Public Health Wales COVID response (February 2020 – September 2021)
- Chair of the Virology & Testing Technical Advisory Group for Welsh Government.
- Chair, All-Wales Antimicrobial Guidance Group
 - This group develops and publishes antimicrobial guidance for the community and hospitals across Wales.
- Chair, British Society for Antimicrobial Chemotherapy Standing Committee for Antimicrobial Susceptibility Testing.
 - This committee publishes guidance for susceptibility testing across the UK.
- Member, Steering Committee of EUCAST (European Committee for Antimicrobial Susceptibility Testing)
 - This committee develops and maintains methods for antimicrobial susceptibility testing that are now used in almost all of Europe, and many other countries.
- Chair EUCAST sub-committee for Anaerobe Susceptibility Testing
 - This committee is developing international methods for antimicrobial susceptibility testing for anaerobic bacteria.
- Chair, UK National External Quality Assurance (NEQAS) Antimicrobial Susceptibility Testing Advisory Group
 - UK NEQAS sends two test organisms to over 800 subscribing laboratories around the world each month. As chair of the advisory group I provide professional input into the organisms sent, and interpretation and reporting of the results.
- Welsh Antimicrobial Resistance Programme
 - While I was the Lead for this programme (2005 – 2016), the programme supported development and implementation of the Welsh Government Antimicrobial Resistance Delivery plan through the collation, analysis and publication of antimicrobial resistance and usage information, and stewardship activities.
- Microbiology Methods Development and Standardisation Group
 - While I was Chair of this group (2008-2012) I led development of Standard Operating Procedures for all microbiology laboratory processes and these are now used in all Welsh laboratories. Through this I gained an in-depth knowledge of laboratory processing.
- Senior examiner, Royal College of Pathologists
- Member, UK Antimicrobial Resistance Alerts Committee
 - This committee identifies and publishes UK-wide alerts when new resistance threats are identified.

Publications

Original papers	55
Book Chapters, Letters, Reviews, Leading articles etc.	32
Abstracts	128

Key Publications

Year	Publication Detail
2020	Wootton M, Davies L, Pitman K, Howe RA . Evaluation of susceptibility testing methods for Burkholderia cepacia complex: a comparison of broth microdilution, agar dilution, gradient strip and EUCAST disc diffusion. Clin Microbiol Infect. 2020 Nov 28;S1198-743X(20)30708-4. doi: 10.1016/j.cmi.2020.11.012
2020	Currie J, Adamson J, Bowden B, Woolls J, Jones R, Healy B, Heyburn D, Shankar AG, Howe R . Impact of a novel community testing pathway for people with suspected COVID-19 in Wales: a cost-minimisation analysis. BMJ Open. 2020 Aug 16;10(8):e038017.
2020	Evans RN, Pike K, Rogers CA, Reynolds R, Stoddart M, Howe R , Wilcox M, Wilson P, Gould FK, MacGowan A. Modifiable healthcare factors affecting 28-day survival in bloodstream infection: a prospective cohort study. BMC Infect Dis. 2020 Jul 25;20(1):545.
2020	MacGowan A, Grier S, Stoddart M, Reynolds R, Rogers C, Pike K, Smartt H, Wilcox M, Wilson P, Kelsey M, Steer J, Gould FK, Perry JD, Howe R , Wootton M. Impact of rapid microbial identification on clinical outcomes in bloodstream infection: the RAPIDO randomized trial. Clin Microbiol Infect. 2020 Oct;26(10):1347-1354.
2020	Mantzourani E, Evans A, Cannings-John R, Ahmed H, Hood K, Reid N, Howe R , Williams E, Way C. Impact of a pilot NHS-funded sore throat test and treat service in community pharmacies on provision and quality of patient care. BMJ Open Qual. 2020 Feb;9(1):e000833. doi: 10.1136/bmjopen-2019-000833.
2018	Ronchetti K, Tame JD, Paisey C, Thia LP, Doull I, Howe R , Mahenthiralingam E, Forton JT. The CF-Sputum Induction Trial (CF-SpIT) to assess lower airway bacterial sampling in young children with cystic fibrosis: a prospective internally controlled interventional trial. Lancet Respir Med. 2018 Jun;6(6):461-471. doi: 10.1016/S2213-2600(18)30171-1. Epub 2018 May 16.
2016	Hay AD, Sterne JA, Hood K, Little P, Delaney B, Hollingworth W, Wootton M, Howe R , MacGowan A, Lawton M, Busby J, Pickles T, Birnie K, O'Brien K, Waldron CA, Dudley J, Van Der Voort J, Downing H, Thomas-Jones E, Harman K, Lises C, Rumsby K, Durbaba S, Whiting P, Butler CC. Improving the Diagnosis and Treatment of Urinary Tract Infection in Young Children in Primary Care: Results from the DUTY Prospective Diagnostic Cohort Study. Ann Fam Med. 2016 Jul;14(4):325-36.
2016	Tyrrell JM, Wootton M, Toleman MA, Howe RA , Woodward M, Walsh TR. Genetic & virulence profiling of ESBL-positive E. coli from nosocomial & veterinary sources. Vet Microbiol. 2016 Apr 15;186:37-43.

Year	Publication Detail
2015	Gillespie D, Hood K, Bayer A, Carter B, Duncan D, Espinasse A, Evans M, Nuttall J, Stanton H, Acharjya A, Allen S, Cohen D, Groves S, Francis N, Howe R , Johansen A, Mantzourani E, Thomas-Jones E, Toghill A, Wood F, Wigglesworth N, Wootton M, Butler CC. Antibiotic prescribing and associated diarrhoea: a prospective cohort study of care home residents. <i>Age Ageing</i> . 2015 Sep;44(5):853-60.
2015	Butler CC, O'Brien K, Pickles T, Hood K, Wootton M, Howe R , Waldron CA, Thomas-Jones E, Hollingworth W, Little P, Van Der Voort J, Dudley J, Rumsby K, Downing H, Harman K, Hay AD; DUTY study team. Childhood urinary tract infection in primary care: a prospective observational study of prevalence, diagnosis, treatment, and recovery. <i>Br J Gen Pract</i> . 2015 Apr;65(633):e217-23.
2014	Jones LS, Toleman MA, Weeks JL, Howe RA , Walsh TR, Kumarasamy KK. Plasmid carriage of bla NDM-1 in clinical <i>Acinetobacter baumannii</i> isolates from India. <i>Antimicrob Agents Chemother</i> . 2014 Jul;58(7):4211-3.
2012	Khan S, Tøndervik A, Sletta H, Klinkenberg G, Emanuel C, Onsøyen E, Myrvold R, Howe RA , Walsh TR, Hill KE, Thomas DW. Overcoming drug resistance with alginate oligosaccharides able to potentiate the action of selected antibiotics. <i>Antimicrob Agents Chemother</i> . 2012; 56(10): 5134-41.
2012	Butler CC, Simpson SA, Dunstan F, Rollnick S, Cohen D, Gillespie D, Evans MR, Alam MF, Bekkers MJ, Evans J, Moore L, Howe R , Hayes J, Hare M, Hood K. Effectiveness of multifaceted educational programme to reduce antibiotic dispensing in primary care: practice based randomised controlled trial. <i>BMJ</i> . 2012 Feb 2; 344: d8173.
2010	Dempsey CE, Hawrani A, Howe RA , Walsh TR. Amphipathic antimicrobial peptides--from biophysics to therapeutics? <i>Protein Pept Lett</i> . 2010; 17(11): 1334-44.
2007	Butler CC, Dunstan F, Heginbotham M, Mason B, Roberts Z, Hillier S, Howe R , Palmer S, Howard A. Containing antibiotic resistance: decreased antibiotic-resistant coliform urinary tract infections with reduction in antibiotic prescribing by general practices. <i>Br J Gen Pract</i> . 2007; 57(543):785-92.
2004	Howe R . A., Monk A., Wootton M., Walsh T.R., Enright M.C. Vancomycin susceptibility within methicillin-resistant <i>Staphylococcus aureus</i> lineages. <i>Emerg.Infect.Dis</i> (2004) 10:855-857.
2003	Howe R.A. , MacGowan A.P. Quinolones, Chapter 198 in 'Infectious Diseases' Eds. Cohen & Powderly. 2 nd edition 2003. Publishers: Mosby. ISBN: 0-323-02407-6.
2002	Walsh T. R. and Howe R.A. The prevalence and mechanisms of vancomycin resistance in <i>Staphylococcus aureus</i> . <i>Annu.Rev.Microbiol</i> (2002) 56:657-675.
2001	Wootton M., Howe R.A. , Hillman R., Walsh T.R., Bennett P.M., MacGowan A.P. A modified population analysis profile (PAP) method to detect hetero-resistance in <i>Staphylococcus aureus</i> in a UK Hospital. <i>J Antimicrob Chemother</i> (2001); 47(4): 399-403.

Year	Publication Detail
1999	Howe R.A. , Wootton M., Walsh T.R., Bennett P.M., MacGowan A.P. Expression and detection of hetero-vancomycin resistance in Staphylococcus aureus. J Antimicrob Chemother (1999); 44: 675-8.
1998	Howe R.A. , Bowker K.E., Walsh T.R., Feest T.G., MacGowan A.P. Vancomycin-resistant Staphylococcus aureus. Lancet (1998); 351: 602.
1997	Jones E.M., Howe R.A. , MacGowan, A.P. Treatment of Listeria meningitis. Lancet (1997); 350: 1034.

2. A list of the groups (i.e. TAG and/or any of its subgroups) in which you have been a participant, and the relevant time periods. Please also confirm if you are or have been a participant in SAGE or other relevant groups.

I was a member of the Welsh Government Technical Advisory Group from 2nd March 2020 and continue as a member to present.

I was a member of the Children and Education sub-group of TAG from its inception on 5th May 2020 until May 2022.

I was Chair of the Testing-TAG, sub-group of TAG from 18th June 2020 until May 2022. The group changed its name to VT-TAG (Virology & Testing TAG) in February 2021 to reflect a wider remit.

A weekly meeting of the Chairs of TAG and its subgroups was established in July 2020. I attended this approximately 50% of the time.

I was also a member of a number of policy advisory groups for Welsh Government as part of my role as Clinical Lead for Microbiology in Public Health Wales, for example, TTP Testing Strategy Sub-Group, Testing Clinical Advisory & Prioritisation Group (TCAP).

3. An overview of your involvement with those groups between January 2020 and May 2022, including:

a. When and how you came to be a participant;

I was invited to join the first meeting of TAG on 2nd March 2020.

I was invited to the Children and Education sub-group of TAG from its inception on 5th May 2020.

I was approached by Dr Rob Orford (Chief Scientific Advisor (Health)) in early June 2020 to chair a new sub-group of TAG focusing of Testing for SARS-CoV-2. Subsequently, on 15th June 2020, a core group of members were invited to the sub-group and the first meeting of TTAG (Testing Technical Advisory Group) was held on 18th June 2020.

b. The number of meetings you attended, and your contributions to those meetings; and

The frequency of TAG meetings varied during the pandemic from 3 times/week to twice/week to weekly or less frequently. There were 149 meetings up to the end of May 2022. I attended approximately 90% of meetings, and was an active contributor, particularly in discussions about testing.

Although I was a member of the Children and Education sub-group of TAG, I only attended approximately 5 meetings.

The Testing TAG (TTAG) and subsequently VT-TAG met weekly until May 2021 and sporadically thereafter. I attended all but 2 meetings. I chaired all meetings that I attended and was an active contributor.

c. Your role in providing research, information and advice.

I was particularly involved in the development of inputs to and from the TTAG/VT-TAG. For the large majority of outputs from the group, I reviewed published and other evidence and drafted advice.

4. A summary of any documents to which you contributed for the purpose of advising TAG and/or its related subgroups on the Covid-19 pandemic. Please include links to those documents where publicly available.

I significantly contributed to 11 documents that were output from the TTAG/VT-TAG, endorsed by TAG and subsequently published. These are listed in the table below and can be accessed at: https://www.gov.wales/publications?field_external_organisations%5B30180%5D=30180

Date of Publication	Title
15/07/2020	Technical Advisory Group: Core principles for utilisation of RT-PCR tests for detection of SARS-CoV-2
15/07/2020	Technical Advisory Group: Repeat antibody testing of school staff
15/07/2020	Technical Advisory Group: Use of tests to detect antibody to SARS-CoV-2 antigens
17/07/2020	Technical Advisory Group: Consensus Statement: Post-mortem testing
11/08/2020	Technical Advisory Group: Consensus statement on recommended testing criteria for discharge of asymptomatic patients to care homes
02/09/2020	Technical Advisory Group: Consensus statement on the impact of single vs double testing of patients prior to discharge from Hospital into a Care Home
29/09/2020	Technical Advisory Group: Consensus Statement on Use-Cases for Near Patient and Point-of-Care Tests for detecting SARS-CoV-2 viral RNA or Antigens

Date of Publication	Title
19/10/2020	Technical Advisory Group: Guidance for assessing the Potential for New Technologies to improve SARS-CoV-2 diagnostic Testing
01/11/2020	Technical Advisory Group: Briefing paper- Infectivity of Covid-19
25/11/2020	Technical Advisory Group: Updated consensus statement on recommended testing criteria for discharge of asymptomatic patients to care homes
25/01/2021	Technical Advisory Group: Consensus statement on testing in the context of vaccination associated with care homes

In addition, I contributed to a Reflections paper on the functioning of TTAG/VT-TAG in April 2022 and subsequently to a Wash-up paper about the functioning of TAG in May 2022. I do not believe that these papers have been published, but they can be shared if required.

5. A summary of any articles you have written, interviews and/or evidence you have given regarding the work of the above-mentioned groups and/or the Welsh Government's response to the Covid-19 pandemic. Please include links to those documents where publicly available.

I have not given any written, interviews and/or evidence regarding the work of the above-mentioned groups or the Welsh Government's response to the Covid-19 pandemic.

6. Your views as to whether the work of the above-mentioned groups in responding to the Covid-19 pandemic (or Wales's response more generally) succeeded in its aims.

This may include, but is not limited to, your views on:

a. The composition of the groups and/or their diversity of expertise;

From my perspective the TAG had a very wide and appropriate membership, drawing from Health, Academia and Government.

The TTAG/VT-TAG had representatives from Public Health Wales, NHS Diagnostic laboratories, Universities, and Welsh government. There were scientists and clinicians with expertise in diagnostics, microbiology, virology epidemiology, genomics, and immunology. In my opinion the membership was appropriate for the evolving tasks.

Attendance at meetings evolved into a core group, but there remained the ability to involve the wider group for specific issues.

On occasion there was a potential over-representation from policy colleagues, which posed a challenge to ensure an appropriate scientific/technical discussion.

b. The way in which the groups were commissioned to work on the relevant issues;

There were two routes of commission to TTAG/VT-TAG – external from policy colleagues or internal from members of the group.

The process through which policy owners sought to commission advice from the group evolved over time towards a proforma-based process managed by the TAC secretariat that was introduced in the latter part of 2021. Prior to this it fell to the group itself to manage commissions. Individual commissions involved varying degrees of discussion and iteration towards a concise, clearly defined and agreed question. In many cases the initial question, while having some scientific element was not in and of itself a truly technical and/or scientific question. In such cases the technical and science issues had to be identified and separated from the policy ones.

There was a recurrent issue with commissions being associated with short – sometimes very short - deadlines, driven by the fact that the policy owner is responding either to the fast-changing pace of the pandemic or other developments such as emerging policy changes in other countries, notably England. This was perhaps inevitable due to the nature of the pandemic response.

c. The resources and support that were available;

The TTAG/VT-TAG was supported by a scientific advisor plus secretariat from Welsh Government.

For members of TTAG/VT-TAG access to information to inform discussion and recommendations was primarily through existing professional channels.

Unfortunately, members of TTAG/VT-TAG were not members or observers on SAGE. There was access to some of the SAGE papers, but it was a significant disadvantage not to have been involved in discussion around relevant SAGE papers, since TTAG/VT-TAG.

There were 2 members of TTAG/VT-TAG who had observer status at New and Emerging Respiratory Virus Threats Advisory Group (NERVTAG). This was helpful, but unfortunately, under this arrangement, not all papers were shared.

d. The advice given and/or recommendations that were made;

I think the advice that was given by TTAG/VT-TAG was appropriate.

The outputs from TAG were not all within my areas of expertise. For those that were, I think the decision process was appropriate and the advice appropriate for the situation.

e. The extent to which the groups worked effectively together; and

For the most part, TAG and the subgroups worked together effectively in my view. There were occasions when subjects that might have benefitted from prior discussion at TTAG/VT-TAG were

presented directly at the main TAG by other sub-groups. This issue was substantially addressed by the formation of a regular meeting of the sub-group chairs in July 2020.

f. The extent to which applicable structures and policies were utilised and/or complied with and their effectiveness.

The positive impact of the advice developed by the TTAG/VT-TAG was obvious when interacting with Policy colleagues. Scientific advice was substantially taken or, if not, it was taken into account.

7. Your views as to any lessons that can be learned from the Welsh Government's response to the Covid-19 pandemic, in particular relating to the work of the above-mentioned groups. Please describe any changes that have already been made, and set out any recommendations for further changes that you think the Inquiry should consider making.

There was often a blurring of scientific and policy discussions, particularly where the same people might be involved in both policy and scientific groups. Personally, I was inputting scientific advice through the TAG system and scientific, operational, and policy advice through Welsh Government policy advisory groups (e.g., Testing Clinical Advisory and Prioritisation group (TCAP)), as well as developing scientific, operational, and policy advice with colleagues in Public Health Wales that was then channelled into Welsh Government through the Chief Medical Officer (Wales). I think consideration should be given as to how there could be separation of scientific advice, operational advice, and policy advice to be put into policy decisions.

8. A brief description of documentation relating to these matters that you hold (including soft copy material held electronically). Please retain all such material. I am not asking for you to provide us with this material at this stage, but I may request that you do so in due course.

I hold personal copies of the paper outputs from the TTAG/VT-TAG.

I have access to the minutes/notes for TTAG/VT-TAG meetings and TAG meetings.